Notice of Allowability	Application No.	Applicant(s)	
	10/712,137	BRAMAN ET AL.	
	Examiner	Art Unit	
	Robert A. Wax	1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment filed December 4, 2006*.

2. ☒ The allowed claim(s) is/are *1-27*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 20060821
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *20070305*.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mark FitzGerald on March 5, 2007.

The application has been amended as follows:

Please replace the claim set with the following:

1. (Amended) An isolated polynucleotide comprising at least two different affinity tag sequences, wherein one of said two affinity tag sequences encodes streptavidin-binding peptide having a nucleotide sequence selected from the group consisting of SEQ ID No.: 5 and SEQ ID No.: 7.

2. (Amended) An isolated polynucleotide comprising a gene sequence of interest and at least two affinity tag sequences, wherein said gene sequence of interest is fused in frame with each of said affinity tag sequences, and wherein one of said two affinity tag sequences encodes streptavidin-binding peptide having a nucleotide sequence selected from the group consisting of SEQ ID No.: 5 and SEQ ID No.: 7.

3. (Amended) An isolated polynucleotide comprising at least two different affinity tag sequences, wherein one of said two affinity tag sequences encodes streptavidin binding peptide, and wherein one of said two affinity tag sequences encodes calmodulin binding peptide.

4. (Amended) An isolated polynucleotide comprising a gene sequence of interest and at least two different affinity tag sequences, wherein said gene sequence of interest is fused in frame with each of said affinity tag sequences, and wherein one of said two affinity tag sequences encodes streptavidin binding peptide, and wherein one of said two affinity tag sequences encodes calmodulin binding peptide.

5. (Original) The isolated polynucleotide of claim 2 or 4, wherein each of said tags are adjacent to the 5' end of the target gene.

6. (Original) The isolated polynucleotide of claim 2 or 4, wherein each of said tags are adjacent to the 3' end of the gene.

7. (Original) A vector comprising the isolated polynucleotide of claim 1, 2, 3 or 4.

8. (Amended) An isolated host cell comprising the vector of claim 5.

9. (Original) A composition comprising the isolated polynucleotide of claim 1, 2, 3 or 4.

10. (Amended) A chimeric protein comprising at least two different affinity tags, wherein one of said affinity tags is streptavidin binding peptide, having the sequence selected from the group consisting of SEQ ID No.: 6 and SEQ ID No.: 8.

11. (Amended) A chimeric protein comprising a protein of interest fused in frame to at least two different affinity tags, wherein one of said affinity tags is streptavidin binding peptide, having the sequence selected from the group consisting of SEQ ID No.: 6 and SEQ ID No.: 8.

12. (Original) A chimeric protein comprising at least two different affinity tags, wherein one of said affinity tags is streptavidin binding peptide and wherein one of said affinity tags is calmodulin binding peptide.

13. (Original) A chimeric protein comprising a protein of interest fused in frame to at least two different affinity tags, wherein one of said affinity tags is streptavidin binding peptide, and wherein one of said affinity tags is calmodulin binding peptide.

14. (Amended) The chimeric protein of claim 11 or 12 wherein each of said affinity tags are adjacent to the N-terminus of the protein of interest.

15. (Amended) The chimeric protein of claim 11 or 12 wherein each of said affinity tags are adjacent to the C-terminus of the protein of interest.

16. (Original) A composition comprising the chimeric protein of claim 10, 11, 12 or 13.

17. (Amended) A method of detecting or isolating one or more binding partners for a protein encoded by a gene of interest, comprising the steps:
cloning a gene sequence of interest into a vector, wherein said gene sequence of interest is fused in frame with at least two different affinity tag sequences, and wherein one of said at least two affinity tag sequences encodes streptavidin

binding peptide having the amino acid sequence selected from the group consisting of SEQ ID No.: 5 and SEQ ID No.: 7,
introducing said vector into an isolated host cell that comprises at least one candidate-binding partner for said protein product of said gene of interest;
allowing said protein product of said gene sequence of interest and said candidate binding partner to form a complex in the cell;
isolating said complex by
a) lysing the cells; and
b) performing at least one round of affinity purification and;
detecting said protein complex.

18. (Amended) A method of detecting or isolating one or more binding partners for a protein encoded by a gene sequence of interest, comprising the steps:
cloning a gene sequence of interest into a vector, wherein said gene sequence of interest is fused in frame with at least two different affinity tag sequences, and wherein one of said at least two affinity tag sequences encodes streptavidin binding peptide, and wherein one of said at least two affinity tag sequences encodes calmodulin binding peptide;
introducing said vector into an isolated host cell that comprises at least one candidate-binding partner for said protein product of said gene sequence of interest;
allowing said protein product of said gene of interest and said candidate binding partner to form a complex in the cell;
isolating said complex by
a) lysing the cells; and
b) performing at least one round of affinity purification and;
detecting said protein complex.

19. (Original) The method of claim 17 or 18 wherein said cell comprises a vector that expresses at least one candidate binding partner for said protein product of interest.

20. (Amended) The method of claim 17 or 18 wherein said candidate binding partner for said protein product of interest comprises an affinity tag.

21. (Amended) A method of detecting or isolating a protein complex comprising the steps of: cloning a gene sequence of interest into a vector, wherein said gene sequence of interest is fused in frame with at least two different affinity tag sequences, and wherein one of said at least two affinity tag sequences encodes streptavidin binding peptide having the amino acid sequence selected from the group consisting of SEQ ID No.: 6 and SEQ ID No.: 8;
introducing said vector into an isolated host cell that expresses at least one protein-binding partner for said protein product of said gene sequence of interest;

allowing said protein product of said gene sequence of interest and said protein binding partner to form a complex in the cell;
isolating said complex by
a) lysing the cells; and
b) performing at least one round of affinity purification; and
detecting said protein complex.

22. (Amended) A method of detecting or isolating a protein complex comprising the steps of: cloning a gene sequence of interest into a vector, wherein said gene sequence of interest is fused in frame with at least two different affinity tag sequences, and wherein one of said at least two affinity tag sequences encodes streptavidin binding peptide, and wherein one of said at least two affinity tag sequences encodes calmodulin binding peptide;
introducing said vector into an isolated host cell that expresses at least one protein-binding partner for said protein product of said gene sequence of interest;
allowing said protein product of said gene sequence of interest and said protein binding partner to form a complex in the cell;
isolating said complex by
a) lysing the cells; and
b) performing at least one round of affinity purification and;
detecting said protein complex.

23. (Original) The method of claim 21 or 22 wherein said cell comprises a vector that expresses at least one candidate binding partner for said protein product of interest.

24. (Amended) The method of claim 21 or 22, wherein said candidate binding partner comprises an affinity tag.

25. (Original) The method of claim 17, 18, 21 or 22, wherein said complex is isolated by performing at least two successive rounds of affinity purification.

26. (Original) A kit for isolating a protein complex or identifying one or more binding partners for a protein, comprising the vector of claim 7, and packaging means.

27. (Original) The kit of claim 26, further comprising a purification resin.

28. (Canceled)

29 (Canceled)

2. The following is an examiner's statement of reasons for allowance: The prior art does not teach SEQ ID Nos.: 5 and 7 and, therefore, claims directed thereto, or to methods of use thereof, are neither anticipated nor obvious. Additionally, while dual affinity rags are known, there is insufficient motivation to select the combination of streptavidin binding protein and calmodulin binding protein and, thus, the combination is neither anticipated nor obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Wax whose telephone number is (571) 272-0623. The examiner can normally be reached on Monday through Friday from 9:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Kathleen Kerr Bragdon can be reached on (571) 272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Robert A. Wax
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Art Unit 1656

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